



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/577,657

05/01/2006

Ralph Lange

P71138US0

3187

136 7590 06/23/2008

JACOBSON HOLMAN PLLC
400 SEVENTH STREET N.W.
SUITE 600
WASHINGTON, DC 20004

EXAMINER

CHAPEL, DEREK S

ART UNIT

PAPER NUMBER

2872

MAIL DATE

DELIVERY MODE

06/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,657	Applicant(s) LANGE ET AL.	
	Examiner DEREK S. CHAPEL	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/1/06 & 6/5/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/5/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The preliminary amendment received 6/5/2006 is acknowledged.

Status Of Claims

2. This Office Action is in response to an amendment received 6/5/2006 in which Applicant lists claims 1-8 as being currently amended. It is interpreted by the examiner that claims 1-8 are pending.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The Information Disclosure Statement(s) (IDS) filed on 6/5/2006 was considered.
5. The notice of related patent applications filed 6/5/2006 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The notice of related patent applications has been placed in the application file, but the information referred to therein has not been considered.

Drawings

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "DE". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "4" has been used to designate both "a detection tube lens" and "illumination tube lens" and because reference character "5" has been used to designate both "an illumination tube lens" and "detection tube lens". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to because the numbers and reference characters are not plain and legible (i.e. numbers 4 and 6 overlap with the elements) as per 37 CFR 1.84(l). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

9. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “second optical arrangement is a diffractive optical element”, “a second lens is provided on another

Art Unit: 2872

deflecting element or is integrated in the deflecting element, singly or in combination with the second element at the beam splitter” and “the second optical arrangement comprises a tilted mirror in deflecting element in the form of a convex or concave mirror” must be shown or the features canceled from the claims (see claims 3, 7 and 8). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

10. Claim 1 is objected to because the claim uses the alternative language “and/or.” Use of “and/or” creates uncertainty as to metes and bounds of the claim because it is unclear from the multiplicity of combinations possible which features are intended to be included in the claimed combination. For the purpose of this examination “and/or” has been interpreted as “or”.

11. Claim 2-8 are objected to for inheriting the same informalities through their dependency from claim 1.

12. Claim 7 recites the limitation "the second element" in the third line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The mislabeling of the elements in the specification creates confusion which prevents understanding as to which elements are the “at least one optical arrangement” and “a second optical arrangement”, and which beam paths are the “illumination and detection beam paths”.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-2, 4-5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Webb et al, U.S. Patent Number 6,166,385 (hereafter Webb).

17. As to claim 1, Webb discloses a laser scanning microscope (see figure 1) with a non-descanned detection or observation beam path, illumination and detection beam paths and a direction of detection (see figure 1), the laser scanning microscope comprising:

a beam splitter positioned for separation of the illumination and detection beam paths (see figure 1, element 38);

at least one optical arrangement in the direction of detection for regular transmission of a detected light (see figure 1, element 46); and

a second optical arrangement (see figure 1, element 22) between the beam splitter and the optical arrangement (see figure 1, elements 38, 22 and 46) for reducing the diameter of a beam to be imaged (see figure 1, element 22).

18. As to claim 2, Webb discloses that the second optical arrangement is a convex lens (see figure 1, element 22).

19. As to claim 4, Webb discloses that the beam splitter is contained within a housing (see figure 1, element 38 and the box surrounding elements 22, 24, 52, 54 and 38), the

Art Unit: 2872

second optical arrangement being mounted immediately at the beam splitter housing in a direction of the detection (see figure 1, element 22).

20. As to claim 5, Webb discloses that the second optical arrangement is integrated in the housing of the beam splitter (see figure 1, element 22).

21. As to claim 7, Webb discloses that a second lens (see figure 1, element 20) is provided on another deflecting element or is integrated in the deflecting element (see figure 1, element 34; it is interpreted that the lens '20' is integrated with deflecting element '34' in that they are both a part of the same housing), singly or in combination with the another deflecting element at the beam splitter.

22. Claims 1-2 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Engelhardt et al, U.S. Patent Number 6,496,307 B2 (hereafter Engelhardt).

23. As to claim 1, Engelhardt discloses a laser scanning microscope (see figures 2 and 3) with a non-descanned detection or observation beam path, illumination and detection beam paths and a direction of detection (see figures 2 and 3), the laser scanning microscope comprising:

a beam splitter positioned for separation of the illumination and detection beam paths (see figures 2 and 3, element 21);

at least one optical arrangement in the direction of detection for regular transmission of a detected light (see figures 2 and 3, elements 17 or 18); and

a second optical arrangement (see figure 3, element 25) between the beam splitter and the optical arrangement (see figure 3, elements 21, 25, 17 and 18) for

Art Unit: 2872

reducing the diameter of a beam to be imaged (see figure 3, element 25; it is noted that lens 25 focuses the light into the optical fiber 26).

24. As to claim 2 Engelhardt discloses that the second optical arrangement is a convex lens (see figure 3, element 25).

25. As to claim 6, Engelhardt discloses that the second optical arrangement is replaceable or can be plugged in (see figures 2 and 3; it is noted that the second optical arrangement of figure 3, lens 25, is replaceable since elements 25, 26 and 27 of figure 3 are replaced in figure 2 by elements 22).

Claim Rejections - 35 USC § 103

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

28. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

Art Unit: 2872

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

29. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Webb et al, U.S. Patent Number 6,166,385 (hereafter Webb) in view of Londono et al, U.S. Patent Number 5,260,828 (hereafter Londono).

30. As to claim 3, Webb does not specifically disclose that the second optical arrangement is a diffractive optical element (DOE).

However, Londono teaches that standard refractive lenses can be replaced with lenses having both refractive and diffractive optical properties (see column 2, lines 14-45 as well as column 8, lines 29-47 of Londono).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify laser scanning microscope of Webb to include the teachings of Londono so that the second optical arrangement of Webb (see figure 1, element 22 of Webb) is replaced by a converging lens having both refractive and diffractive optical properties for the purpose of correcting for temperature induced back focal length changes and for controlling aberrations, as taught by Londono (see column 8, lines 29-47 of Londono).

Art Unit: 2872

31. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt et al, U.S. Patent Number 6,496,307 B2 (hereafter Engelhardt) in view of Londono et al, U.S. Patent Number 5,260,828 (hereafter Londono).

32. As to claim 3, Engelhardt does not specifically disclose that the second optical arrangement is a diffractive optical element (DOE).

However, Londono teaches that standard refractive lenses can be replaced with lenses having both refractive and diffractive optical properties (see column 2, lines 14-45 as well as column 8, lines 29-47 of Londono).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify laser scanning microscope of Engelhardt to include the teachings of Londono so that the second optical arrangement of Engelhardt (see figure 3, element 25 of Engelhardt) is replaced by a converging lens having both refractive and diffractive optical properties for the purpose of correcting for temperature induced back focal length changes and for controlling aberrations, as taught by Londono (see column 8, lines 29-47 of Londono).

33. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt et al, U.S. Patent Number 6,496,307 B2 (hereafter Engelhardt) in view of Tsien, U.S. Patent Number 5,296,703 (hereafter Tsien).

34. As to claim 8, Engelhardt does not specifically disclose that the second optical arrangement comprises a tilted mirror in the form of a convex or concave mirror.

However, Tsien discloses a laser scanning microscope having convex and concave mirrors (see figure 1, elements 11, 13 and 14 of Tsien).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the laser scanning microscope of Engelhardt to include the teachings of Tsien so that plain mirror 15 of Engelhardt is replaced by a convex or concave mirror for the purpose of converging or diverging the incoming light to a desired spot or spots.

Conclusion

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEREK S. CHAPEL whose telephone number is (571)272-8042. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. S. C./
Examiner, Art Unit 2872
6/16/2008

/Stephone B. Allen/
Supervisory Patent Examiner
Art Unit 2872